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Report of the Milk Commission,
November 14, 1910.



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OF THE
MILK COMMISSION
TO THE
GOVERNOR OF HAWAII

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THE HONORABLE WALTER F. FREAR,
Governor of The Territory of Hawaii.

SIR:—In accordance with Joint Resolution No. 4, approved April 15, -1909, we beg leave to report as follows:

The Resolution required the Milk Commission to thoroughly examine and investigate the Regulations of the Board of Health; the laws of the Territory and any ordinances of the City and County of Honolulu, safeguarding the sale of milk and control of dairies, and the manner of the enforcement of the said laws so far as they affect the City and County of Honolulu.

The Commission confined its enquiries to the dairies supplying the City of Honolulu with milk. There are in all some 46 registered or licensed dairies supplying Honolulu; of these, three are some distance from Honolulu viz, Kahuku, Mokuleia and Kunea, the last mentioned dairy supplying only cream. In addition to the above, there are several private dairies, selling such milk to neighbors as is not used by the owners.

The 46 dairies give Honolulu a supply of about 4,500 quarts of milk per day. Of this, some 1,600 quarts is delivered in bottles and the balance is peddled in cans or containers of various kinds and degrees. The Honolulu Dairymen's Association handles about 2,500 quarts of this milk per day from eight dairies.

Of the 46 registered dairies the Commission inspected 42, including the dairies at Mokuleia and Kunea and Kahuku. The conditions found were such as to call for action of some kind, with a view to improvement.

Many of the dairies inspected were found to be in an unsatisfactory condition, first as to location. At least 25 of them were in locations that prevent their being run on a sanitary basis. During the rainy season they are more or less mud holes, and a good deal of this mud is bound to get into the milk. In such surroundings it is impossible to run a sanitary dairy. Sixteen dairies were found to be in very poor condition so far as sanitation is concerned. In many of these no suitable provision was

made for the disposal of the excreta of the cows. In more than one instance it was dumped alongside the barn, where the cows were milked.

In point of construction many of the dairies need improvement. Eight dairies have wooden floors, 16 concrete, 10 concrete and stone; four have dirt floors and four have no shed or barn, the cows being milked in the open paddock. Many of the concrete floors are badly cracked and filled with dirt, which does not conduce to the production of clean milk.

In only one instance did we find the water used for dairy purposes contaminated.

There is great room for improvement in the method of milking. Five dairymen were frank in their admission that they never troubled to clean the udders of the cows or wash their hands before milking, while twelve others stated that they washed the udders when very dirty, otherwise they did not. This state of affairs should not be allowed to exist.

In the matter of milk rooms and cooling of milk, we found a woeful lack. Seventeen dairies had absolutely no provision for either storing or cooling of the milk produced, and yet the milk is kept from one to four hours before delivery to customers, and has undoubtedly to stand from two to three hours before the customers awake in the morning to receive their milk. Twelve dairymen used water for cooling purposes. One instance of how inadequate this system is came to our notice, when it was discovered that a five gallon oil can was used to cool milk in a 12 quart milk can. By no stretch of the imagination, can anyone conceive of such a system being sufficient.

An instance has come to the notice of the Commission, where milk was kept in a small room along with the family washing; instances were also noted where milk was kept in a place to which dogs had access.

In the matter of cleaning of utensils used in milking and in the transportation of milk, there exist very loose and insanitary methods. Most of the dairies clean the utensils with hot water, sometimes using soap or pearline. After cleaning, the utensils are hung up in all sorts of places; in rear of the family kitchen or bath room; alongside of drain pipes and sinks. This exposure of the utensils will not ensure a supply of clean milk.

PRESENT LAWS AND REGULATIONS

The only Territorial law affecting the sale of milk is that passed in 1898 and amended in 1903. This law was known as the Territorial Food Law and had a section fixing the standard of milk, allowing two and one-half per cent ($2\frac{1}{2}\%$) butter fat and eleven and one-half per cent ($11\frac{1}{2}\%$) solids.

In addition to the above, the late Mr. R. A. Duncan informed us that he sometimes prosecuted cases under a section of the law forbidding the sale of decomposed articles of food.

The Territorial Board of Health have regulations, relating to the construction of stables.

The best apparent law or ordinance passed so far, however, is County Ordinance No. 17 called "AN ORDINANCE PROVIDING FOR THE INSPECTION OF MILK AND DAIRIES AND DAIRY COWS, AND REGULATING THE SALE OF MILK, AND PROHIBITING AND PUNISHING THE DISPOSITION OF UNWHOLESOME, IMPURE OR ADULTERATED MILK IN THE CITY AND COUNTY OF HONOLULU."

This ordinance was introduced on February 8, 1910, and received the approval of the Mayor of the City and County of Honolulu on March 21, 1910, and should have taken effect thirty days after approval.

The criticisms we have to offer on the County Ordinance are:

1. That four months—the time allowed an applicant for a permit—appears to be too long a time within which to have the cows tested; it would be better for the cows to be tested before the milk from the same was allowed to be sold;

2. IN REGARD TO THE REVOCATION OF A PERMIT GRANTED. It would be almost impossible to obtain the unanimous consent of the Board of Supervisors of the City and County of Honolulu to the revocation of a permit for the first offense. Such matters would be better left to a committee of the Board of Supervisors or the officers having the enforcement of the ordinance in hand. Nothing whatever is said as to what procedure is to be followed in case of a second or subsequent offense.

3. There is practically nothing in the ordinance regulating the conditions surrounding the production of milk beyond the

vague words "Milk drawn from cows kept in an unhealthy or unsanitary condition."

The enforcement of this ordinance is left to the Milk Inspector or Inspectors, under the supervision of the City and County Physicians. We are informed that to date, this ordinance has not been enforced and that it will not be enforced until January 1911. The excuse given for this delay is that the cows were being tested by the Territorial Veterinarian, Dr. Norgaard, and his Assistant Dr. Case. These tests so far as Honolulu is concerned are practically finished and there appears to be no reason why the ordinance should not have been enforced immediately upon becoming law. The testing of the cows would not seem to be excuse enough for allowing the sale of milk with a bacterial count of 18,000,000 per cubic centimeter as proved by the bacterial counts made by Dr. L. N. Case in samples taken by members of the Commission. These samples were purchased from milk wagons and taken to Dr. Case at once, and examined by him without delay. In all, four samples were examined. These showed an average of 5,099,000 bacteria per cubic centimeter. The highest being 18,900,000 and the lowest 50,000 bacteria per cubic centimeter. It is to be regretted that other samples taken and sent were not examined for want of time.

The condition of many of the dairies in regard to the disposal of the stable sweepings, shows an unfortunate lack of supervision.

The Commission feels that too great care cannot be exercised in the enforcement of all ordinances and regulations re the production, handling and sale of milk, and the conduct of dairies. Milk is one of the most easily contaminated of foods. It forms the only article of diet of infants, and is used by all who can afford to buy it; it is therefore necessary that the utmost care be exercised.

The average price of milk in Honolulu is higher than in cities of the Mainland. This is due to two reasons:

1. The high cost of feeding in Honolulu;
2. The fact that cows will not produce as much milk in a warm climate as in a cold one.

RECOMMENDATIONS

Taking the above conditions and facts as they are, we respectfully beg to make the following recommendations:

1. That the full control of the dairies supplying milk to Honolulu be given to the Board of Agriculture and Forestry, a separate Dairy Department or Division being formed, if necessary, for carrying out the work effectively.

The reasons for this recommendation are that:

(a) The dairies will receive the benefit of the Scientific Supervision of experts in dairy matters, which will be of benefit to the community;

(b) It will remove from local politics, and place under permanent and systematic supervision, an important article of diet;

II. That the Board of Agriculture and Forestry be given full power to grant and withdraw licenses or permits; make regulations pertaining to sanitation, technique of milking, method of delivery etc. and that they be vested with full power to carry out their regulations;

III. That a larger number of Inspectors be employed;

IV. That better sanitation and more cleanly methods of milking be insisted upon. The following are a few rules suggested as reasonable and necessary to the production of safe milk:

(a) Good concrete or wooden floors, free from cracks and thoroughly cleaned before or after each milking;

(b) A special milk room (absolutely clean) at each dairy where milk can be cooled and stored until delivery time and where milking utensils can be kept after being cleaned;

(c) The udders to be washed and dried with clean cloths directly before milking, and the milker's hands to be washed before milking each cow;

(d) Milking to be done with dry hands;

(e) The milking pail to have a small opening (not over 6" in diameter);

(f) The cow's tail to be tied during milking, in such a manner as to prevent her from swishing her tail, and thus dropping dirt and excreta into the milk;

(g) Immediately after milking, the milk to be cooled with tap water circulating through a cooler;

(h) The milk then to be transported (very soon after milking) in sanitary containers;

V. We recommend the installing of PASTEURIZING DEPOTS (as may be necessary) in different parts of the city; and that all milk be pasteurized before delivery to customers, except that of a very high standard of purity; the requirements for this standard being that:

(a) The cows and the milkers shall be free from contagious disease, and

(b) That the milk on delivery shall not contain more than 50,000 bacteria to the cubic centimeter. (Milk of the very best quality is generally conceded to be that which contains less than 10,000 bacteria per cubic centimeter.)

We recommend pasteurization for all other milk for two main reasons: viz.

1. As long as the City's milk supply is from about forty or more scattered dairies, it is impossible to enforce regulations regarding sanitation and cleanly milking; such being the case, the milk is sure to be more or less dirty and unwholesome, especially for babies; but if such milk be pasturized UNDER PROPER SUPERVISION it will not change perceptibly the character of the milk, as regards, for instance, the taste or the rising of the cream; but will render it almost as wholesome as the highest grade pure milk, because pasteurization kills practically all of the disease germs and poisons which develop in dirty milk.

2. The second reason for pasteurization is on account of the enormous prevalence here of tuberculosis in Cattle, (as evidenced by the report of Dr. Norgaard, the Territorial Veterinarian.)

Pasteurization would effectually kill the tubercular germ.

VI. That the Pasteurization depots be owned by or under the control of the Board of Agriculture and Forestry, and that the milk

after Pasteurization and cooling to at least 50 degrees F. be delivered in sanitary containers to the consumers.

We consider it entirely practicable to carry out pasteurization, as suggested, because it has, for a long while, been adopted in Germany, Denmark and many other parts of the world.

VII. The expense of the process should be small and should be borne by the Government, as otherwise, it is liable to raise the price of milk, thus driving the consumer of small means to deprive his children of cow's milk, and resort to condensed milk;

VIII. All dairy cows should be tested once a year, at the expense of the Government, the Tuberculin test being used;

IX. That it continue to be the policy of the Board of Agriculture and Forestry to eliminate all tubercular cows from all herds;

X. That a bacterial count be made, from time to time, of the milk from every dairy, without previous notice, and that any dairy selling milk with a bacterial count of one million or over per cubic centimeter, before Pasteurization, shall have its license withdrawn, unless there be improvement in a reasonable length of time;

The bacteriological test is the best we have as to the purity of milk;

XI. That no dairy be allowed, under penalty of having its license or permit cancelled, to sell milk that has a visible sediment of dirt, on standing;

XII. We recommend the passage of a law allowing milk containing two and one-half per cent ($2\frac{1}{2}\%$) of butter fat to be sold. The reason for this is:—

That those dairymen, who desire to produce milk of this sort—which if produced in a cleanly manner will be just as pure as milk with a higher per cent of butter-fat—may be allowed to do so. It is generally conceded that Holstein cows produce milk of this sort in greater quantity than other cows do with a higher per cent of butter-fat. This will allow the production of more milk per cow and thus keep down the price;

XIII. A stricter supervision of so called private dairies, many of whom, without obtaining a license or permit, are selling milk to those outside of their immediate family, thus enjoying a privilege which should, as a matter of right, belong to the licensed dairymen;

XIV. The publication either monthly or quarterly of the results of the work of the Bureau of Agriculture and Forestry in the matter of the regulation of dairies. This will educate both the dairymen and the public as to what is being done.

These are the recommendations we beg to submit for such action as the Legislature of the Territory of Hawaii and yourself may desire to take. We trust, however, such measures as we have recommended may be taken, so as to ensure a supply of clean milk.

Here in our beautiful Mid-Pacific Islands, with its climate unexcelled, babies should flourish, and the death rate among these innocents should be very low; such, however, is not the case. We have in Honolulu, a death rate among infants, exceeding the average for the registration cities on the mainland. In fact exceeding the death rate in all but 21 cities on the mainland of the United States. Fully 50% of the deaths among babies under one year of age are due to Gastro-Intestinal trouble. In these days of conservation it would seem worth while to conserve what we have in the way of human life, by giving these helpless ones a chance to live; many lives can undoubtedly be saved if a better standard of milk was insisted on for the city.

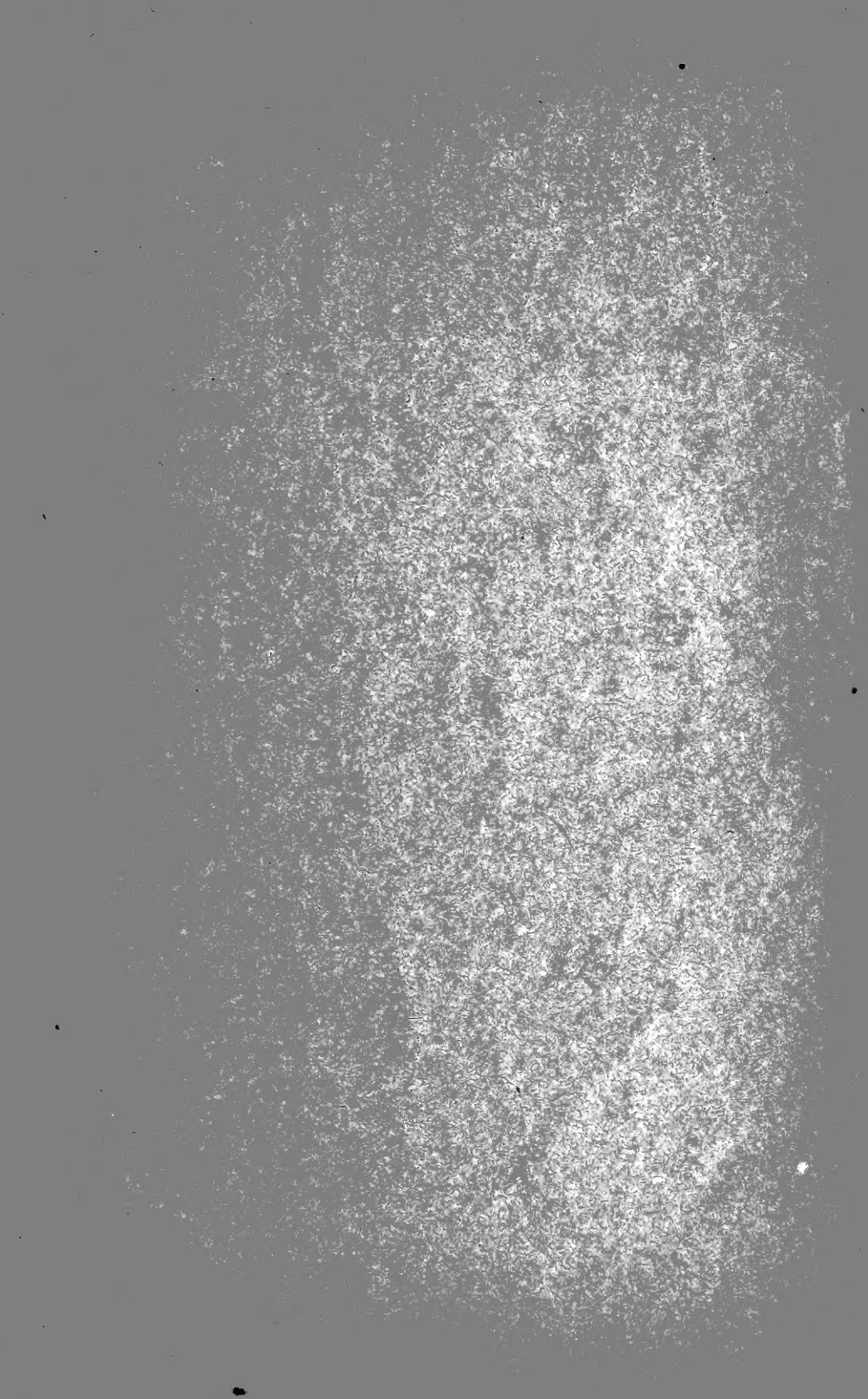
In concluding we desire to point out, that while many dairies are far below standard, there are some dairymen who are making an honest effort, not only to improve their dairies, but also to raise the standard of milk.

We desire to record our appreciation to the Territorial Veterinarian, Dr. V. S. Norgaard and his Assistant, Dr. L. N. Case, for valuable help and suggestions given to this Commission.

Respectfully submitted,

JAS. A. RATH
W. D. BALDWIN
F. G. KRAUSS





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